

**USEPA/Weston Comments on Groundwater Monitoring Plan
December 9, 2009**

1)-General Comment. QAPP is required for performing the sampling and analysis associated with the monitoring plan.

2)-Section 1.3 General Project Information. The major objectives of this monitoring plan are not clearly defined and should be revised as follows: (1) Establish current baseline conditions for developing a long-term detection monitoring program; and (2) Establish a "Groundwater Management Zone" as required by the State of Illinois.

3)-2.3 Hydrogeology. The last sentence of this section states that "data suggest that the unconsolidated deposits are saturated from the water table downward." This has not been established conclusively. No soil samples have been taken and laboratory analyzed for water content or saturation level. Other data, such as the boring logs suggest that the level of saturation in the clayey-silty aquitards at this site vary quite a bit below the water table. Notations in the boring logs vary from moist to very wet, suggesting that there are significant volumes of soil beneath the phreatic water table that are not at 100% saturation and may contain gas. It should be acknowledged in the text that other data may suggest that some unconsolidated deposits below the water table may not be saturated with groundwater.

4)-Section 3.1.1, Chemical Parameters to be Analyzed. Sufficient baseline monitoring data has not been collected to evaluate which chemical parameters may be considered indicators of groundwater impact from MNL. Accordingly, the monitoring program should also include the minimum list of detection monitoring parameters established by Title 35, Section 811.319 (a)(2) of the Illinois Administrative Code. This list is provided as follows:

Ammonia – Nitrogen (dissolved)
Arsenic (dissolved)
Boron (dissolved)
Cadmium (dissolved)
Chloride (dissolved)
Chromium (dissolved)
Cyanide (total)
Lead (dissolved)
Magnesium (dissolved)
Mercury (dissolved)
Nitrate (dissolved)
Sulfate (dissolved)
Total Dissolved Solids (TDS)
Zinc (dissolved)

Additionally following parameters should be included in the monitoring program.

BOD

COD.
Nitrates and Nitrites.
Dissolved Oxygen
Redox
Turbidity

5)-Section 3.2.1 Sampling Procedures, Paragraph 1 should be revised as follows:
“Groundwater sampling and analysis procedures will be implemented in accordance with Title 35, Section 811.318(e) of the Illinois Administrative Code. Techniques for the collection of groundwater samples will be followed as described below:”

6)-Section 3.2.1 Sampling Procedures describes a low-flow groundwater sampling technique using a peristaltic pump. Groundwater should be sampled using a bladder pump and low-flow purging and sampling techniques. If the bladder pump fails to retrieve a sufficient sample volume from a selected monitoring point, then a peristaltic pump may be utilized for sampling purposes.

7)-Section 3.2.2 Proposed Monitoring Points. Although it is mentioned at the outset of this plan that the long term remedial goals and objectives included “groundwater monitoring to detect potential releases”, no off-site monitoring points are proposed in this sampling plan. No rationale is provided for not including off-site wells as part of the baseline sampling. Off site wells should be included for sampling to establish a baseline. Monitoring wells MW-201S, MW-201D, MW-202, MW-203, MW-204-D, MW-204S, MW-206, GP-22 A & B, GP-25 A&B, GP-27 A&B should be included for sampling using all of the parameters in the baseline monitoring plan.

In addition there are several monitoring wells where contamination was previously detected (Refer to Section 2.5) and have not been included in the list for monitoring. All monitoring wells in which contamination was previously detected should also be included in the monitoring plan.

Additional monitoring points should be included in the southeast corner for methane monitoring. This is necessary because one of the methane migration pathway in the area is suspected to be through groundwater.

Provision should be made in the plan to install or include additional monitoring points as warranted by the results of the baseline sampling.

8)-Section 3.2.4, Sampling and Field Measurement Equipment stipulates that groundwater will be sampled using disposable bailers. Any reference to bailer usage should be stricken from the monitoring plan.

9)-Section 3.2.1 Sampling Procedures. 5)-Section 3.13, Monitoring Frequency. RMT proposes that one baseline round of groundwater sampling be performed. Groundwater flow and/or water quality characteristics are subject to seasonal variations and long-term climatic influences. Accordingly, background concentrations for the parameters – identified in Section 3.1.1 of the monitoring plan and review comment No. 1 – must be established based on consecutive quarterly sampling of selected monitoring wells for a

minimum of one year. After completing 1 year of baseline monitoring, leachate and groundwater quality data may be evaluated to determine which parameters might be considered indicators of groundwater impact and whether additional rounds of baseline monitoring are warranted.

DO, turbidity, Redox potential etc. should be included as field parameter in the monitoring plan.

10)-Section 3.1.2, Proposed Monitoring Points. Based on the review of select boring logs and geologic cross-sections, deeper granular units are likely to occur between the lowest screen depths of proposed monitoring points and the landfill's base elevation. That being said, RMT should evaluate and select deeper monitoring points, as available, to detect potential releases from the landfill.